

Work Order ID 137948

October 16, 2015 11:03:26 AM

137948

Page 1

Item ID: D4148-041 Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: Stop ***NS2***
 Item Name: Fwd Crosstube Lug Assembly
 Start Date: 10/16/2015 Start Qty: 6.00 ***6*** Cust Item ID:
 Required Date: 10/30/2015 Req'd Qty: 6.00 ***6*** Customer:
 Reference:

Approvals: Process Plan: SM Date: 0151015 Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr	Revision Nbr
D4148	E

100		0.00							
100									
Small Fab	Memo	0.03							
Small Fab	1- Assemble as per dwg								

6x 16/01/05 DAS 36 9-89

110	QC5- Inspect part completeness to step on W/O	0.00							
110									
QC	Memo	0.00							
Quality Control									

JAN 05 2016 DAS 38 9-89

120	Identify as per dwg & Stock Location: <u>ST39</u>	0.00							
120									
Packaging	Memo	0.00							
Packaging									

JAN 06 2016 DAS 6 9-89

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____			
Misidentified ☐	Past Due ☐				

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Item ID: D4148-041 Accept *N900040100* Setup Start *NS1*
Revision ID: Stop *NS2*
Item Name: Fwd Crosstube Lug Assembly
Start Date: 10/16/2015 Start Qty: 6.00 *6* Cust Item ID:
Required Date: 10/30/2015 Req'd Qty: 6.00 *6* Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start *NR1*
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130	QC21- Final Inspection - Work Order Release	0.00							
130									
QC	Memo	0.01							
Quality Control									

MLJ JAN 06 2016

MLJ JAN 06 2016

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					

Root Cause				FAULT CATEGORY							
Environment	☐	Design	☐	Pressure/Forced	☐	Temperature/Cure	☐	Power Loss/Surge	☐	Positioned Wrong	☐
	☐		☐	Bending	☐	Set-up	☐	Folio/Program	☐	Outside Dimensions	☐
Doc/Data	☐		☐	Centre Not Concentric	☐	BOM/Route	☐	Grain	☐	Over/Under tolerance	☐
Equip/Tooling	☐		☐	Cracks	☐	Broken/Damage/Defect	☐	Weld	☐	Part Incorrect	☐
Handling/Pre	☐		☐	Crimp/Kink/Ripple/Wave	☐	Inspection Incomplete/Unqualified	☐	Wrong Stock Pulled	☐	Part Lost/Missing	☐
Material	☐		☐	Cuffs	☐	Contamination	☐	Out of Sequence	☐	Part Moved	☐
Internal Transport	☐		☐	Crushing	☐	Countersink	☐	Off-set	☐	Drawing	☐
Tribal Knowledge	☐		☐	Heat Treat	☐	Cut Too Short	☐	Mislabeled	☐	Finish	☐
LOA	☐		☐	Wave/Twist in Tube	☐	Instructions Incomplete/Unclear	☐	Fit/Function	☐	Misread	☐
Substation	☐		☐	Marks/Chatter	☐	Drill Holes	☐	Misaligned/off center	☐	Turning Sequence	☐
Past Expiry Date	☐		☐	OTHER : _____							
Misidentified	☐		☐								

Picklist Print

October 16, 2015 11:03:33 AM

Page 1

Work Order ID: 137948

137948

Parent Item: D4148-041

D4148-041

Parent Item Name: Fwd Crosstube Lug Assembly

Start Date: 10/16/2015

Required Date: 10/30/2015

Start Qty: 6.00

Required Qty: 6.00

Comments:

IPP Rev:A 10.06.24 new issue DD verf:EC

IPP Rev:B 10.07.22 as per revB DD verf:JLM

10.10.29 as per revC DD verf:EC

AS PER DWG REV.D DD VERF:EC

IPP Rev:C

IPP REV:D 11.03.02

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

MS21043-3

Purchased

No

100

Each

690.0000

4

12

MS21043-3

**DAS
30
9-89**

JAN 06 2016

Nut

Location

Loc Qty

Loc Code

FG

80

103691

80

FP001

11

m130673

11

GA

139

m130673

15

m131677

124

ST304

423

m131340

160

m133031

263

ST308

37

m132551

37

12

Picklist Print

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Page 2

Work Order ID: 137948

Parent Item: D4148-041

Parent Item Name: Fwd Crosstube Lug Assembly

137948

D4148-041

Start Date: 10/16/2015

Required Date: 10/30/2015

Start Qty: 6.00

Required Qty: 6.00

MS21043-4

Purchased

No

100

Each

1,037.000

1

18

DAS
30
9-89

JAN 05 2015

MS21043-4

Nut

**

Location

Loc Qty

Loc Code

CCK004

300

m133316

300

CCK007

300

m132803

300

FG

40

104603

40

GA

101

m128798

101

ST304

296

m128818

39

m131697

33

m132382

4

m133031

70

m133134

150

1

17

JAN 05 2016

D2690-6

Manufactured

No

100

Each

53.0000

1

6

DAS
30
9-89

D2690-6

Lanyard

**

Location

Loc Qty

Loc Code

ST009

13

135768

13

ST012a

40

137308

10

137431

30

B 137 431 (6)

Picklist Print

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Page 3

Work Order ID: 137948

137948

Parent Item: D4148-041

D4148-041

Parent Item Name: Fwd Crosstube Lug Assembly

Start Date: 10/16/2015

Required Date: 10/30/2015

Start Qty: 6.00

Required Qty: 6.00

D3910-1 Manufactured No

100 Each 44.0000 1 6

DAS
30
9-89

JAN 05 2016

D3910-1

Crosstube Lug

**

Location

Loc Qty

Loc Code

ST523

44

~~B 133401~~

133421

4

136920

40

6

D4091-1 Manufactured No

100 Each 25.0000 1 6

DAS
30
9-89

JAN 05 2016

D4091-1

Mounting Lug

**

Location

Loc Qty

Loc Code

ST525

25

133927

25

6

D4148-1 Manufactured No

100 Each 0.0000 2 12

DAS
30
9-89

JAN 05 2016

D4148-1

Crosstube Lug Plate, Fwd

D4148-3

Manufactured No

100 Each 8.0000 1 6

DAS
30
9-89

JAN 05 2016

D4148-3

Stud Receiver, Lower

**

Location

Loc Qty

Loc Code

ST086

1

B 139651

135619

1

ST103a

7

134972

7

6

D4148-5 Manufactured No

100 Each 5.0000 1 6

DAS
30
9-89

JAN 05 2016

D4148-5

Eyebolt Stud

**

Location

Loc Qty

Loc Code

ST086

5

B 139038

135582

5

6

DAS
30
9-89

JAN 05 2016

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Shop Packet Print

Page 3

Picklist Print

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Page 4

Work Order ID: 137948

137948

Parent Item: D4148-041

D4148-041

Parent Item Name: Fwd Crosstube Lug Assembly

Start Date: 10/16/2015

Required Date: 10/30/2015

Start Qty: 6.00

Required Qty: 6.00

AN3C12A	Purchased	No	100	Each	86.0000	2	12	DAS	
AN3C12A								30	JAN 05 2016
Bolt								9-89	

Location	Loc Qty	Loc Code
GA	71	
M128727	71	
ST349	15	
M128727	15	

AN4C13A	Purchased	No	100	Each	54.0000	3	18	DAS	
AN4C13A								30	JAN 05 2016
BOLT								9-89	

Location	Loc Qty	Loc Code
GA	4	
m132767	4	
ST344	50	
m133234	50	

MS17984-C413	Purchased	No	100	Each	33.0000	1	6	DAS	
MS17984-C413								30	JAN 05 2016
Quick Release Pin								9-89	

Location	Loc Qty	Loc Code
CCK004	21	
m132570	11	
m133316	10	
ST312A	3	
m133031	3	
ST315	9	
m132677	7	
m132852	2	

Picklist Print

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Work Order ID: 137948

137948

Parent Item: D4148-041

D4148-041

Parent Item Name: Fwd Crosstube Lug Assembly

Start Date: 10/16/2015

Required Date: 10/30/2015

Start Qty: 6.00

Required Qty: 6.00

MS20615-4M18

Purchased

No

100

Each

162.0000

8

48

DAS
30
9-89

JAN 05 2016

MS20615-4M18

Rivet

**

Location

Loc Qty

Loc Code

GA

162

m123810

162

48

DAS
30
9-89

JAN 05 2016

NAS1149C0332R

Purchased

No

100

Each

5,312.000

4

24

NAS1149C0332R

WASHER

**

Location

Loc Qty

Loc Code

FP001

1004

m132930

1004

FP01

1521

m133284

1521

GA

441

m133284

441

ST271

2346

m133284

2346

DAS
30
9-89

JAN 05 2016

NAS1149C0432R

Purchased

No

100

Each

972.0000

6

36

NAS1149C0432R

WASHER

**

Location

Loc Qty

Loc Code

GA

889

m125807

428

m131467

461

ST271

83

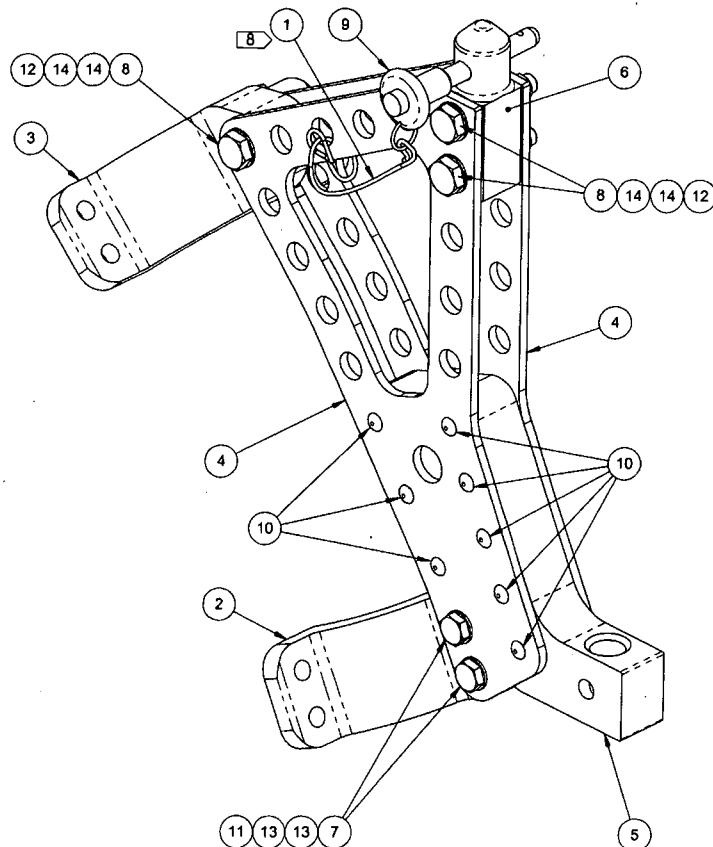
m131467

83

M 133790

32

#14



D4148-041 FWD X-TUBE LUG ASSY

NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: IDENTIFY WITH DART P/N "D4148-041" PER DART QSI 044 6.1
- 7) WEIGHT: 3.66 lbs
- 8) ATTACH D2690-6 TO D4148-1 BY LOOPING AROUND A LIGHTENING HOLE FIRST AND THEN SECURE TO MS17984-C413

ITEM	QTY	P/N	DESCRIPTION
	X	D4148-041	FWD X-TUBE LUG ASSY
1	1	D2690-6	LANYARD
2	1	D3910-1	X-TUBE LUG
3	1	D4091-1	MOUNTING LUG
4	2	D4148-1	FWD X-TUBE LUG PLATE
5	1	D4148-3	STUD RECEIVER LOWER
6	1	D4148-5	EYEBOLT STUD
7	2	AN3C12A	BOLT
8	3	AN4C13A	BOLT
9	1	MS17984-C413	PIN, QUICK RELEASE
10	8	MS20615-4M18	RIVET, SOLID, PAN-HEAD
11	2	MS21043C3	NUT, SELF-LOCKING
12	3	MS21043C4	NUT, SELF-LOCKING
13	4	NAS1149C0332R	WASHER
14	6	NAS1149C0432R	WASHER

RELEASED
2013-08-16

E	B6-4 Ø0.268 HOLE ADDED FOR CARGO TUBE INSTALLATIONS.	AJS	13.07.22
D	HOLE DIA CHANGED TO 0.252" (D6-3); HOLE DIA CHANGED TO 0.250" (C8-5); REPLACED QTY(2) AN3C12A, MS21043C3 AND QTY(4) NAS1149C0332R WITH QTY(2) AN4C13A, MS21043C4 AND QTY(4) NAS1149C0432R (D3-1, C4-2)	SC	11.02.22
C	REDESIGNED D4148-1/3 TO ADDRESS COMPATIBILITY ISSUES WITH D350-591 SHORT STEPS	MB	10.10.12
B	REPLACED QTY(3) MS20615-4M18 WITH QTY(2) EACH AN3C12A, MS21043-3 AND QTY(4) NAS1149C0332R WASHER (ZN D3-1, B7-2 & B4-2); MS20615-4M18 WAS MS20615-4M20 (ZN D3-1 & B7-2); Ø0.191 2 PL REPLACES Ø0.129 3 PL (ZN D6-3); Ø0.129 7 PL WAS 10 PL (ZN A7-3); Ø0.191 WAS 0.129 (ZN C8-5) REASON: SEE TR-D350-607-2 REV. 8.	MB	10.07.05
A	NEW ISSUE	MB	10.06.18
REV.	DESCRIPTION	BY	DATE

DESIGN	MB	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	AJS		
CHECKED		DRAWING NO.	REV. E
MFG. APPR.		D4148	SHEET 1 OF 5
APPROVED		TITLE	SCALE
DE APPR.		FWD X-TUBE LUG ASSY	NTS
DATE	13.07.22	COPYRIGHT © 2010 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

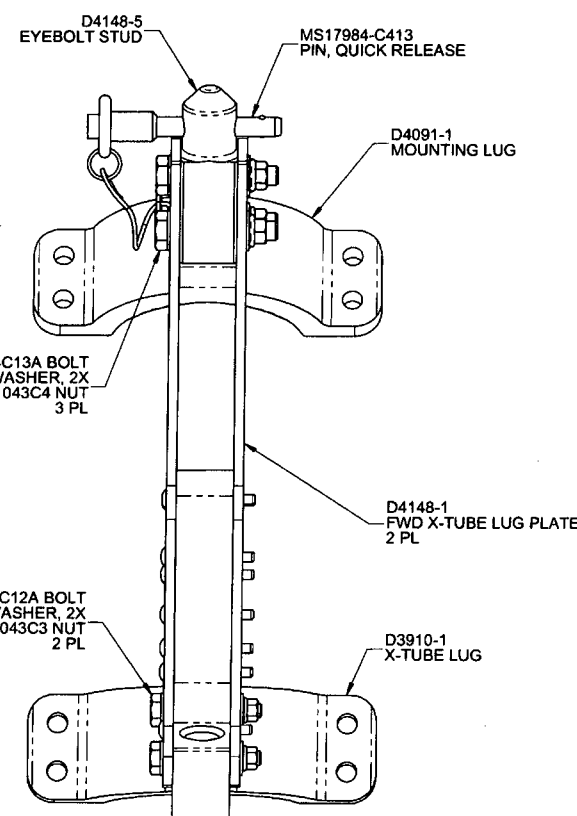
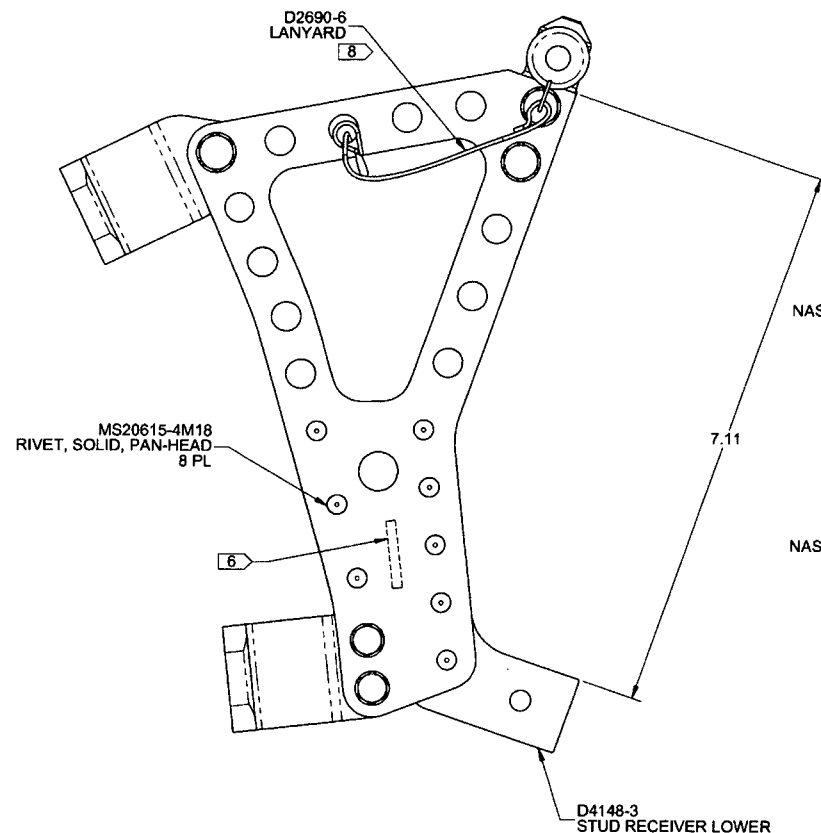
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D

C

B

A

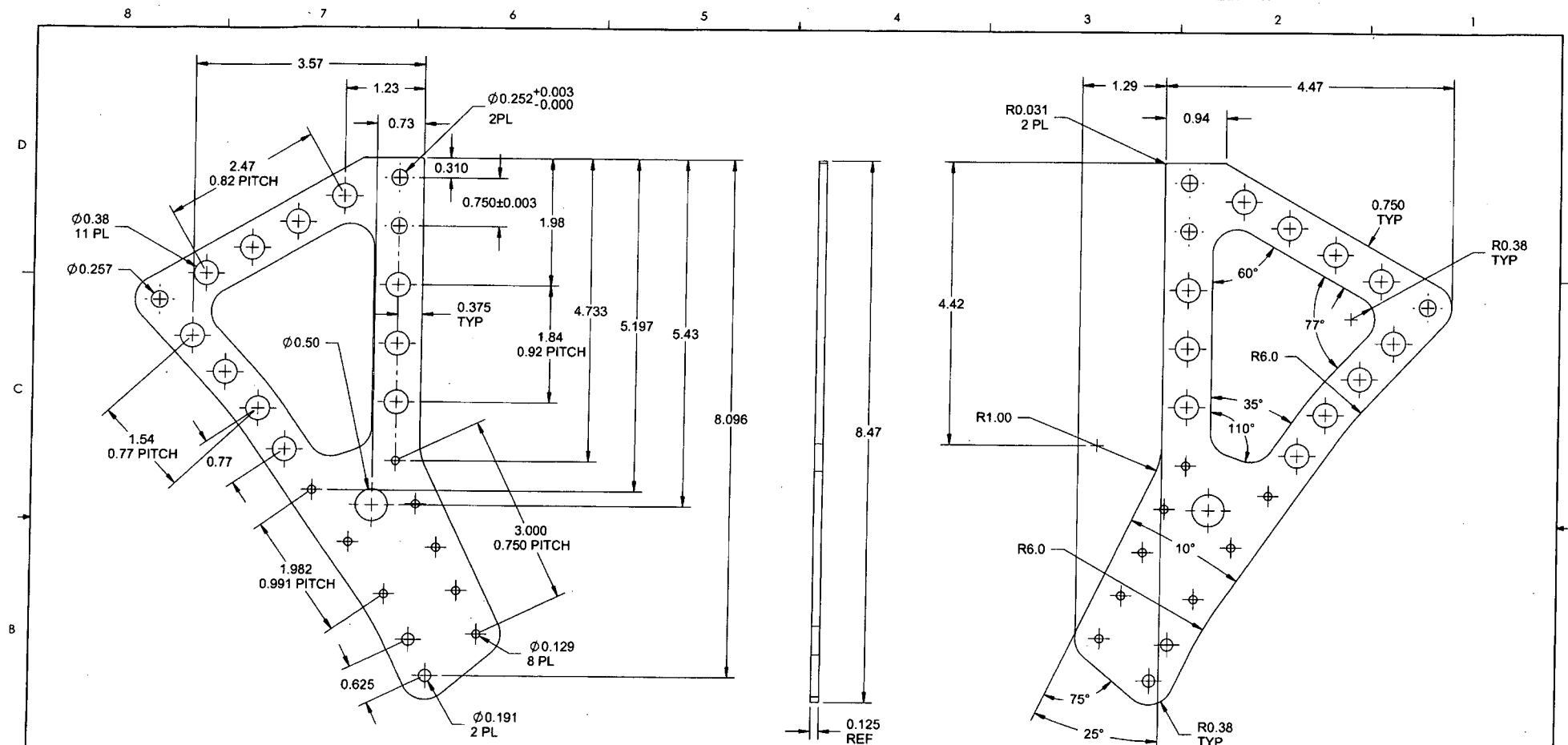


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2013-08-16

D4148-041 FWD X-TUBE LUG ASSY

DESIGN	MB	DART AEROSPACE LTD	
DRAWN	AJS	HAWKESBURY, ONTARIO, CANADA	
CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. E
MFG. APPR.	<i>[Signature]</i>	D4148	SHEET 2 OF 5
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	FWD X-TUBE LUG ASSY	NTS
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8 7 6 5 4 3 2 1



D4148-1 FWD X-TUBE LUG PLATE

NOTES:

- 1) MATERIAL: 303/304/316 STAINLESS STEEL 0.125" SHEET ANNEALED 2B FINISH, PER MIL-S-5059 OR AMS 5513/5524 OR ASTM A240 OR ASME SA240 REF DART SPEC M304S11GA OR M303S11GA
- 2) FINISH: NONE
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK ALL SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 0.52 lbs

RELEASED
2013-08-16

DESIGN	MB	DART AEROSPACE LTD	
DRAWN	AJS	HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO.	REV. E
MFG. APPR.		D4148	SHEET 3 OF 5
APPROVED		TITLE	SCALE
DE APPR.		FWD X-TUBE LUG ASSY	NTS
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8 7 6 5 4 3 2 1

D

C

B

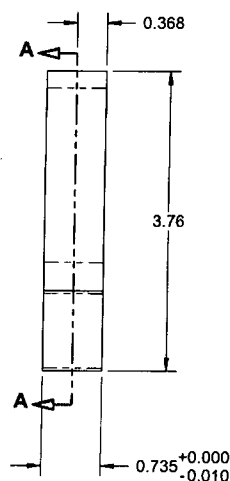
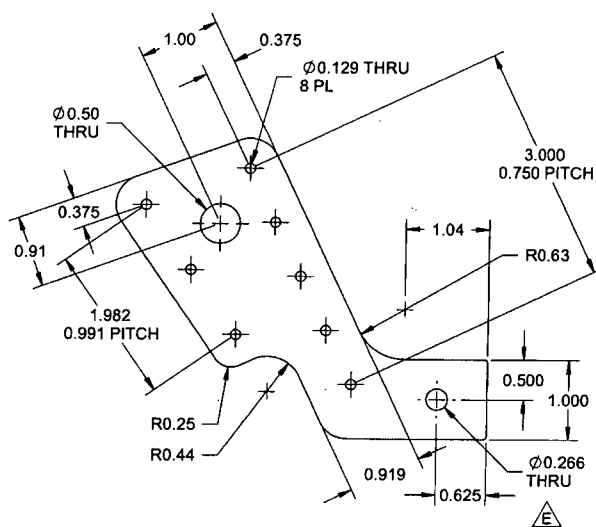
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D

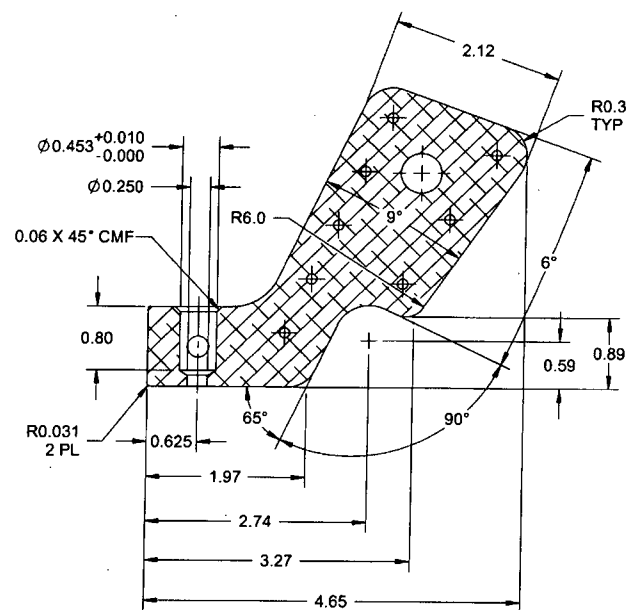
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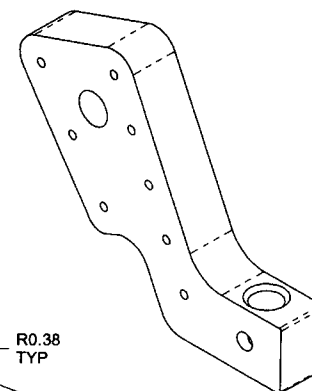
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D4148-3 STUD RECEIVER LOWER



SECTION A-A



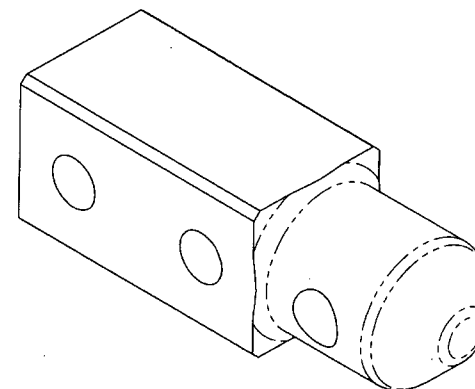
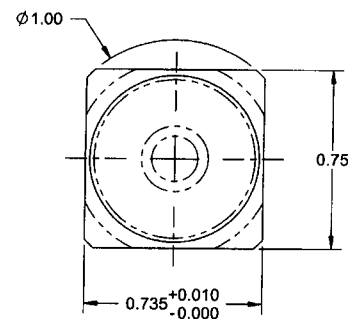
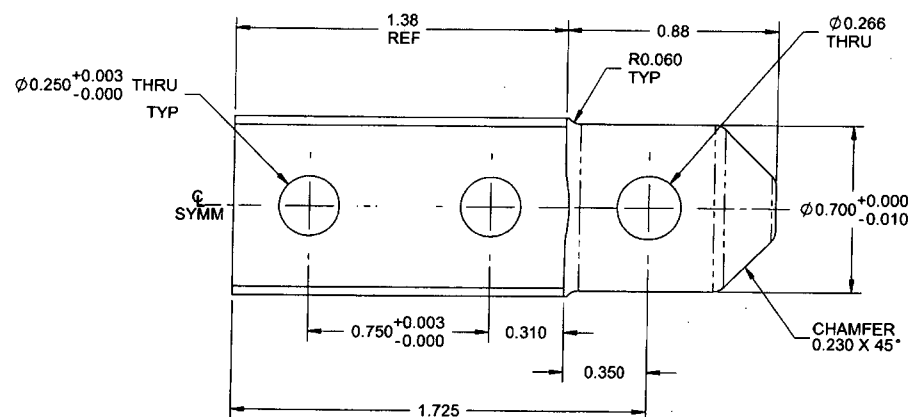
NOTES:

- 1) MATERIAL: 303/304/316 STAINLESS STEEL BAR PER ASTM A582 OR ASTM A276
REF DART SPEC M304B OR M303B
- 2) FINISH: NONE
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK ALL SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 1.51 lbs

RELEASED
2013-08-16

DESIGN	MB	DART AEROSPACE LTD	
DRAWN	AJS	HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO.	REV. E
MFG. APPR.		D4148	SHEET 4 OF 5
APPROVED		TITLE	SCALE
DE APPR.		FWD X-TUBE LUG ASSY	NTS
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8 7 6 5 4 3 2 1



D4148-5 EYEBOLT STUD

NOTES:

- 1) MATERIAL: 303/304/316 STAINLESS STEEL BAR PER ASTM A582 OR ASTM A276
REF DART SPEC M304B OR M303B
- 2) FINISH: NONE
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK ALL SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 0.27 lbs

RELEASE
2013-08-16

DESIGN	MB	DART AEROSPACE LTD	
DRAWN	AJS	HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO.	REV. E
MFG. APPR.		D4148	SHEET 5 OF 5
APPROVED		TITLE	SCALE
DE APPR.		FWD X-TUBE LUG ASSY	NTS
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